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the "other" category shows a growth in market shares held by "credit unions and others" from 4.6 per cent in 1955 to 9.9 per cent in 1961, followed by a slight drop to 9.7 per cent in 1962.

The Finance Rate Concept

BASIS OF MEASUREMENT

The finance rate is the effective annual rate which the credit buyer's finance charges represent on the declining unpaid credit balance of his note during the scheduled period of indebtedness. The basic elements in every credit transaction are the amount of credit, the time schedule for repayment, and the finance charges. Most automobile credit contracts require periodic amortization of the outstanding indebtedness, usually through monthly instalments. A portion of each payment represents the finance charge; the remainder is repayment of principal. At each payment date the ratio of the finance charge to unpaid principal during the period represents the rate of charge for that period, that is, per day, week, month, or year. We have chosen a year as the basic unit of time in which to express the finance rate.

Constant-Ratio Formula

For convenience in calculating finance rates on large numbers of individual credit contracts, we utilized the constant-ratio formula.[9]

Its main assumption is that each (equal) monthly payment consists of a constant amount to pay the finance charge and a constant amount to repay the principal; hence, the ratio between them is constant. This results in an approximation of the rate of charge normally used in actuarial computations of interest. The approximation provides reasonably accurate results compared with the conventional practice used to determine interest rates.[10]

RELATION TO INTEREST RATES

Measurement of finance rates on an annual basis corresponds, in principle, to effective annual interest for credit generally. The convention of the year as the unit of time for expression of the cost of money is firmly established and rarely challenged. With respect to instalment credit, however, there is no customary convention for the expression of finance costs as a rate per period of time, except

9. $i = D/[(n+1)/m] \div P/2 = 2mD/P(n+1)$, where i is the finance rate, m is the number of payments in one year, n is the number of payments, D is the finance charge in dollars and cents, and P is the principal of the note.

10. For further discussion of rate concepts and comparisons of alternative methods of determining rates of charge see Mors, *op. cit.*

in the small-loan industry, where state legislation has followed the monthly rate quotation under the Uniform Small Loan Law[11] since 1916.

Finance rates charged consumers, including new-auto rates, are generally higher than interest rates. The differential is largely attributable to the higher risk and added expense incurred in the provision of relatively small amounts of credit to individuals on an instalment basis. Expenses incurred in checking the applicant's credit standing and the bookkeeping expense involved in servicing periodic payments on loans of moderate size make the mechanical provision of consumer instalment credit expensive. Add to this the collection expense and losses involved in delinquency and repossession among a large number of small borrowers, and one has largely accounted for the difference between the finance rate and interest rates in other credit sectors.[12]

NOMINAL AND EFFECTIVE FINANCE RATES

In the credit contract, buyers and sellers usually agree on separately stated dollar costs of the automobile and accessories, insurance coverage, and credit. The finance rate concept measures only the stated cost of credit to the borrower at the time the agreement is reached and is, in essence, a *nominal* rate that may or may not equal the actual rate. In indirect financing, particularly, and direct financing to a lesser extent, the finance rate may be affected by the prices of goods and services sold jointly with credit (or on credit). When joint sales occur, one cannot be certain that the stated price of each component is an exact representation of its cost to either the buyer or the seller. In order to effect a sale, the seller may anticipate that the buyer will be more resistant to one price than to another and allocate his separate prices accordingly; that is, the auto dealer may understate the car price by overvaluing the trade-in and recoup his overvaluation with the added income from his share of the finance charge, his insurance commissions, or other elements of the transaction. Hence, nominal prices of automobiles, insurance, and credit play a significant part in reaching agreement on joint sales.

11. An agreement on legislative policy entered into by the Russell Sage Foundation, the National Federation of Remedial Loan Associations, and the American Association of Small Loan Brokers. See Louis N. Robinson and Rolf Nugent, *Regulation of the Small Loan Business* (New York: Russell Sage Foundation, 1935), p. 96.

12. See Paul F. Smith, *Cost of Providing Consumer Credit* ("Occasional Papers," No. 83 [New York: NBER, 1962]), Table 1, p. 4.

Of concern in this study of automobile credit charges is whether there is, in sales finance transactions, a systematic substitution of dealers' added finance income for income from the price of the auto itself. Furthermore, there may be substitution between insurance and finance income. Preliminary investigation suggests that higher nominal finance rates accompany lower margins above the dealer cost of autos on indirectly financed transactions, particularly among contracts held by sales finance companies. When evidence of this nature was encountered, the reasons for the relation between nominal rates and dealer margins were investigated; no attempt was made to adjust nominal rates. This report confines its attention to nominal rates, postponing attention to their interrelations with other elements of the transaction until cross-section analyses of the structure of rates have been completed.

The 1954–55 Finance Rate Structure

Finance rates on new auto credit contracts in the United States averaged 10.86 per cent per year during 1954 and 1955. One-fourth of the contracts were at rates below 9.52 per cent, and one-fourth were higher than 11.73 per cent. The data of Table 2 suggest considerable variation in rates.

Type of credit agency and region

Table 2 reveals that customers of sales finance companies in 1954–55 paid 11.37 per cent, on the average, and customers of commercial banks which purchased their notes from dealers paid 10.84 per cent. New automobile purchasers obtaining direct loans at commercial banks paid the lowest average rate shown, 9.48 per cent. The remaining contracts for which rate data were available averaged 10.92 per cent, representing credit contracts held by auto dealers, credit unions, personal finance companies, and others.

Regionally, there were differences in average finance rates paid by new-auto credit purchasers (Table 3). The lowest average rates prevailed in the northeast and north-central regions at levels of 10.65 and 10.70 per cent, respectively. Higher average finance rates were paid in the South (11.04 per cent) and in the West (11.14 per cent).

Some of the differences in regional rate level are attributable to the method of finance and type of credit agency holding the credit contract. In the West, for example, the higher rate is attributable to both a high proportion of indirectly to directly financed credit